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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,626	10/29/2003	Bala Ramachandran	03SKY0003	5553
24504	7590	07/21/2005	EXAMINER	
THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP 100 GALLERIA PARKWAY, NW STE 1750 ATLANTA, GA 30339-5948			WONG, LINDA	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 07/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/696,626

Applicant(s)

RAMACHANDRAN ET AL.

Examiner

Linda Wong

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4/28 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Applicant's Arguments, filed 4/28/2005, with respect to the rejection(s) of claim(s) 1-33 under Shi have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Isberg et al (US Patent No.: 6029052).

Drawings

2. The drawings were received on 2/25/2005. These drawings are accepted.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1,2,5,8,14,16,20-22,25,27** are rejected under 35 U.S.C. 102(b) as being unpatentable by Isberg et al (US Patent No.: 6029052).
 - a. **Claim 1**, Isberg et al discloses receiving a signal (Fig. 2, label 10) comprising converting a first signal based on a first system (Fig. 5, label GSM) to a first baseband signal (Fig. 2, label 44), converting a second signal based on a second system (Fig. 5, label DCS) to a second baseband signal (Fig. 2, label 44), processing the first baseband signal using baseband components (Fig. 2,

- labels 44) and processing the second baseband signal using the baseband components (Fig. 2, label 44).
- b. **Claim 2, 14, 22**, Isberg et al discloses a multi-mode receiver for processing baseband signals of global System for Mobile Communication (GSM), Personal Communication Systems (PCS) and Digital Communication Systems (DCS).
 - c. **Claims 5, 16, 25**, Isberg et al disclose a multi-mode receiver that processes modes at different frequencies, wherein each mode inherently has different frequency response characteristics. (Fig. 5, labels GSM, DCS, and PCS)
 - d. **Claim 8**, Isberg et al discloses a plurality of systems and inherently, discloses receiving a plurality of signals since the receivers continuously receives signals produced from any of the types of systems.
 - e. **Claim 11** inherits all the limitations of claim 1.
 - f. **Claim 20** inherits all the limitations of claim 8.
 - g. **Claim 21** inherits all the limitations of claim 1, but claim 1 does not recite a means for transmitting and receiving. Robinett (US Publication No.: 20020193108) (Fig. 3A-1, labels 124/128 and 123/126) and Isberg et al discloses a means for transmitting and receiving. (Fig. 5, label 10)
 - h. **Claim 27** inherits all the limitations of claims 21 and 20.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 3,4,6,7,9,10,15,17,18,19,23,24,26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Isberg et al (US Patent No.: 6029052) in view of Peterzell et al (US Patent No.: 6694129).
- a. **Claim 3, 23**, Isberg et al discloses a baseband processor comprising well know components, but Isberg et al does not disclose the well known components. Peterzell et al discloses a baseband processor (Fig. 4, label 230), which can comprise the following: a filter, DC cancellation, amplifier, and sampling. (Col. 7, lines 54-60) Since the baseband processor disclosed by Isberg et al are well known, it would be obvious to one skilled in the art to provided the possible components found in Peterzell et al's baseband processor.
- b. **Claims 4, 24**, Although Isberg et al does not teach a processor with at least one of a digital domain and an analog domain, Peterzell et al disclose an analog domain and a digital domain. (Fig. 5, before ADC, domain is analog, after ADC, domain is digital) It would be obvious to one skilled in the art to provide an analog domain in which the received signal can be processed to eliminate interference and noise and a digital domain so that the signal can be transmitted.
- c. **Claims 6, 7, 10, 15, 17, 19**, Although Isberg et al does not disclose the components in the baseband processor, Peterzell et al discloses a baseband processor comprising DC cancellation, matched and jammer filtering, which can

be low-pass, all-pass, high-pass filters, finite-impulse response filters or smoothing filters, automatic gain controllers (AGC), and decoding into digital data or audio streams. (Col. 7, lines 54-60) It would be obvious to one skilled in the art to build a system containing these components to eliminate interference and correct deficiencies within devices such as A/D converter.

d. **Claim 9,18**, Although Isberg et al does not disclose the components within the baseband processor (Fig. 2, label 44), Peterzell et al discloses possible components within their baseband processor (Fig. 4, label 230), wherein the baseband processor comprises sample decimation. (Col. 7, lines 54-60) Since the system disclosed by Isberg et al and Peterzell et al discloses processing baseband signals of different frequencies or modes, it is inherent that the sampling rates found in the baseband processor would vary to accommodate the Nyquist theorem.

e. **Claim 26** inherits all the limitations of claim 18.

5. **Claims 12 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Isberg et al (US Patent No.: 6029052) in view of Robinett (US Publication No.: 20020193108).

f. **Claims 12 and 13**, Although Isberg et al does not teach two down-converters, Robinett discloses a multi-mode transceiver comprising a baseband processor (Fig. 3A-2, label 310), wherein two down-converters (Fig. 3A-2, labels 442 and 446), with different sampling rates (Fig. 3A-2, labels 444a and 444b) are within

the baseband processor. It would be obvious to one skilled in the art to use a down-converter to lower the sampling rate and increase the frequency.

6. **Claims 28-33** are rejected under 35 U.S.C. 103(a) as being unpatentable over Isberg et al (US Patent No: 6029052) in view of Peterzell et al (US Patent No.: 6694129).

- a. **Claim 28**, Although Isberg et al does not disclose a digital-broadcast system that shares the common baseband processor, Peterzell et al discloses a multi-mode receiver processing CDMA signals as well as GPS, GSM, etc. using a common baseband processor. (Fig. 4, label 230 and Col. 7, lines 54-60)
Although Peterzell et al does not explicitly disclose processing digital broadcasted signals, broadcasted signals can be processed using CDMA components. A digital broadcasting system comprised of one transmitter and multiple receivers. (Goldsmith, Slide 2 and Google Definition: Broadcast)
Goldsmith discloses in her lecture, the use of code division to process signals from a broadcast channel. (Goldsmith, Slide 3) It would be obvious to one skilled in the art to use CDMA components to process DBS signals since signals produced from broadcasting can be deciphered by generating a PN code that would decode the signal.
- g. **Claims 29 and 31** inherit all the limitations of claim 7.
- h. **Claim 30** inherit all the limitations of claim 7, but claim 7 does not recite an inclusion of switchable bandwidths within an LPF and DC-correction element.

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Isberg et al disclose a multi-mode receiver that processes different modes with different frequency responses. (Col. 3, lines 42-45) Since each mode uses a different frequency, it would be inherent that the bandwidths use to process each mode must change. It would be obvious to one skilled in the art to include switchable bandwidths to follow the criterias of the Nyquist theorem, which would prevent aliasing.

- b. **Claims 32 and 33** inherit all the limitations of 7 and 10. Although Isberg et al and Peterzell et al does not disclose using varying sampling rates, the systems disclosed by Isberg et al and Peterzell et al are multi-mode systems, it is inherent that the sampling rates used are different and the frequency response would be different for each of the systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linda Wong whose telephone number is 571-272-6044. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LW



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